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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09-470,343	12/22/1999	Bernardo Martinez-Tovar	P-1583	6032

20978 7590 06/25/2003

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EXAMINER

CHAMBERS, TROY

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 06/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/470 343

Examiner

Troy Chambers

Applicant(s)

MARTINEZ-TOVAR ET AL

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION

Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.

- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED, 35 U.S.C. § 133.
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2003
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration
- 5) ☒ Claim(s) 1-11 and 18-20 is/are allowed
- 6) ☒ Claim(s) 12-17 and 21-24 is/are rejected
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f)
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)
- a) ☐ The translation of the foreign language provisional application has been received
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s) _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 12-17 and 21-24 are rejected under 35 U.S.C. 102(b) as being anticipated by PCT Publication WO 9742462 issued to Martinez-Tovar ("MT"). MT discloses a semiconductor bridge device 10, comprising: a silicon or sapphire substrate 12 (pg. 11, ll. 29-30); an electrical bridge structure disposed on the substrate 12 (fig. 1), the bridge structure comprising a layer of semiconductor material; a layer consisting essentially of titanium 18, 20 (pg. 11); the bridge structure comprising a bridge section 14c extending between pad sections 14a/b; a pair of aluminum lands 16a/b (pg. 9, ll. 13-36); a pair of electrical leads 32 a/b; and, a capacitor connected to said leads 32 a/b (pg. 24, ll. 24-29).

3. With respect to claim 12, MT discloses a preconditioning step comprising thermal annealing (pg. 10).

4. With respect to claim 21, the device of MT is capable of accepting a voltage sufficient to melt the solid metal and vaporize the semiconductor.

5. Claims 21-23 rejected under 35 U.S.C. 102(b) as being anticipated by Benson. Benson discloses an SCB igniter comprising: a substrate, a bridge comprising a layer of semiconductor material and having thereover a layer of solid metal, a bridge section

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extending between and connecting spaced-apart pad sections and lead wires connected to said lands capable of accepting a voltage sufficient to melt the solid metal.

Allowable Subject Matter

6. Claims 1-11 and 18-20 are allowed.
7. The following is a statement of reasons for the indication of allowable subject matter: Claims 1 and 18 uses the language "consisting essentially of" which not only limits the material of the bridge to titanium but does not allow for any other layers comprising any other metal. Applicant should respond accordingly if there is any disagreement with this interpretation.

Response to Arguments

8. Applicant's arguments filed 6-12-03 have been fully considered but they are not persuasive. With respect to claim 12, applicant argues: "Nowhere does Martinez-Tovar state that the titanium in the semiconductor bridge disclosed therein has been preconditioned so that it will be able to resist temperature-induced variations in bridge electrical resistance..." However, pg. 10, ll. 6-23 of Martinez-Tovar makes it clear that applicant's preconditioning process, or thermal annealing, is well known in the art.

With respect to claim 21, applicant argues, "the voltage applied to the bridge does not lead to the removal of solid metal from between the semiconductor material and the energetic material" because of the difference between the melting temperature of tungsten and the vaporization temperature of the semiconductor bridge material. However, this presumes MT uses a voltage sufficient only to vaporize the

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semiconductor bridge material. It should be clear to one of ordinary skill in the art that the use of metal with a higher melting point requires a higher operating voltage.

Additionally, it would appear the applicant's device suffers from the same alleged shortcomings of MT. The melting temperature of titanium is 1668 °C, which is above the vaporization temperature (1400 °C) of silicon as argued by the applicant.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Troy Chambers whose telephone number is (703) 308-

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5870. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J. Carone, can be reached at (703) 306-4198.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-4177. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-7687.

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